



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,564	07/25/2003	Satoshi Hiraoka	116696	9339

25944 7590 05/27/2005

OLIFF & BERRIDGE, PLC  
P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER
----------

HASAN, MOHAMMED A

ART UNIT	PAPER NUMBER
----------	--------------

2873

DATE MAILED: 05/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

23

<b>Office Action Summary</b>	<b>Application No.</b> 10/626,564	<b>Applicant(s)</b> HIRAOKA ET AL.	
	<b>Examiner</b> Mohammed Hasan	<b>Art Unit</b> 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_ is/are allowed.
- 6) ☒ Claim(s) 1 - 10, 13 - 18 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

#### ***Priority***

1. Receipt of acknowledged of papers submitted under 35 U.S.C. 119 (a) – (d), which papers have placed in the file.

#### ***Oath/Declaration***

2. Oath and declaration filed on 7/25/2003 is accepted.

#### ***Claim Objections***

3. Claims 1 and 14 are objected to because of the following informalities:  
Claim 1, line 3, " the particle for a display device " should be" the particle for the display device".  
Claim 14, line 3, " a electric field" should be " an electric field".  
Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent

Art Unit: 2873

granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 10, and 13 - 18 are rejected under 35 U.S.C. 102 (e) as being anticipated by Nomoto et al (6,853,477 B2).

Regarding claim 1, Nomoto et al discloses (refer to figures 1A and 1B) a particle (4) for display device having a positively or negatively chargeable property and a color, the particle for the display device comprising nitrogen atoms in an amount of 0.03 mmol/g to 0.2 mmol/g (column 26 , lines 50 – 67, column 27, line 13, column 16, lines 60 – 67).

Regarding claim 2, Nomoto et al discloses, nitrogen atoms in an amount of 0.05 mmol/g to 0.1 mmol/g ( column 16, lines 60 – 67).

Regarding claim 3, Nomoto et al discloses, wherein the nitrogen atoms take a bond formation enabling reduction in aggregation between particles and reduction in peeling of a particle from a substrate (column 18, lines 5 – 19).

Regarding claim 4, Nomoto et al discloses, wherein the nitrogen atoms take any of the bond formations of primary to tertiary amines (column 16, lines 55 – 67).

Regarding claim 5, Nomoto et al discloses, wherein the nitrogen atoms take a bond formation serving as a starting point in positive charging (column 16, lines 55 – 67).

Regarding claim 6, Nomoto et al discloses , a particles made from at least a colorant, a resin and a nitrogen atom-containing (column 16, lines 55 – 67, i.e., nitrogen atom contain  $\text{NH}_4\text{CL}$ ).

Regarding claim 7, Nomoto et al discloses (refer to figures 1A and 1B) an image display apparatus comprising: an image forming medium on which an image is formed and an electric field generating means, wherein the image forming medium includes: a pair of substrates (1 and 2) facing each other , and a particles group (4) composed of at least 2 or more types of particles sealed in a clearance between the pair of substrates, at least one type of the two or more types of particles having a positively chargeable property, at least another type of the two or more types of particles having a negatively chargeable property, and the positively and negatively chargeable particles, respectively , being of colors that are different from each other (column 26, lines 50 – 67, column 27, lines 1 – 60), wherein at least one type of the positively and negatively chargeable particles contains nitrogen atoms in an amount of 0.03 mmol /g to 0.2 mmol /g (column 16, lines 60 – 67).

Regarding claim 8, Nomoto et al discloses, wherein at least one type of the positively or negatively chargeable particles is black or of a chromatic color (column 1, lines 19 – 27).

Regarding claim 9, Nomoto et al discloses, wherein at least one type of the positively or negatively chargeable particles is white (column 27, lines 61- 67).

Regarding claim 10, Nomoto et al discloses, wherein the white particles each include titanium oxide as a colorant (column 27, lines 61 – 67).

Regarding claim 13, Nomoto et al discloses, wherein the positively or negatively chargeable particles, respectively having colors that are different from each other , have respectively particle diameters and distributions thereof that are substantially equal to each other ( column 1, lines 37 – 41).

Regarding claim 14, Nomoto et al discloses, an image display medium comprising an electric field generating means generating an electric field corresponding to image information, between the pair of substrates ( column 1, lines 14 – 19).

Regarding claim 15, Nomoto et al discloses, wherein the electric field generating means is provided on a surface of each substrate (i.e., substrate 1 and substrate 2) , which surface faces the other substrate facing the other substrate (column 27, lines 36 – 42) .

Regarding claim 16, Nomoto et al discloses, wherein the electric field generating means is embedded in the interior of each substrate (column 27, lines 36 – 42).

Regarding claim 17, Nomoto et al discloses, wherein the electric field generating means is arranged near surface of each substrate , which surface is opposite from a surface which faces the other substrate (column 1, lines 14 – 19).

Regarding claim 18, Nomoto et al discloses (refer to figures 1A and 1B) an image display apparatus comprising: an image forming medium on which an image is formed and an electric field generating means, wherein the image forming medium includes: a pair of substrates (1 and 2) facing each other , and a particles group (4) composed of at least 2 or more types of particles sealed in a clearance between the pair of substrates, at least one type of the two or more types of particles having a positively chargeable

Art Unit: 2873

property, at least another type of the two or more types of particles having a negatively chargeable property, the positively/negatively chargeable particles respectively being of colors that are different from each other, at least one type of the positively/negatively chargeable particles containing nitrogen atoms in a predetermined content, and nitrogen atoms taking a bond formation enabling reduction in aggregation between the nitrogen-containing particles and reduction in peeling of the nitrogen –containing particle from a substrate and wherein the electric field generating means generates an electric field corresponding to image information, between the pair of substrates, to thereby form an image on the image forming medium (column 26, lines 50 – 67, column 27, lines 1 – 60).

### ***Allowable Subject Matter***

5. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show two or more types of particles having different diameter from each other, and white particles including titanium oxide is in the range of from 0.1  $\mu\text{m}$  to 1.0  $\mu\text{m}$  and a diameter of the other type of the white particles is less than 0.1  $\mu\text{m}$ .

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Zwemer et al (4,620,916) discloses a degradation retardants for electrophoretic display devices.

Goden (6,738,039) discloses an electrophoretic display method and device .

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammed Hasan whose telephone number is (571) 272-2331. The examiner can normally be reached on M-TH, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272- 2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Application/Control Number: 10/626,564  
Art Unit: 2873

Page 8

MH  
May 19, 2005

  
Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800

Supervisory Patent Examiner  
Technology Center 2800